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NEWS

Affinity Chromatography

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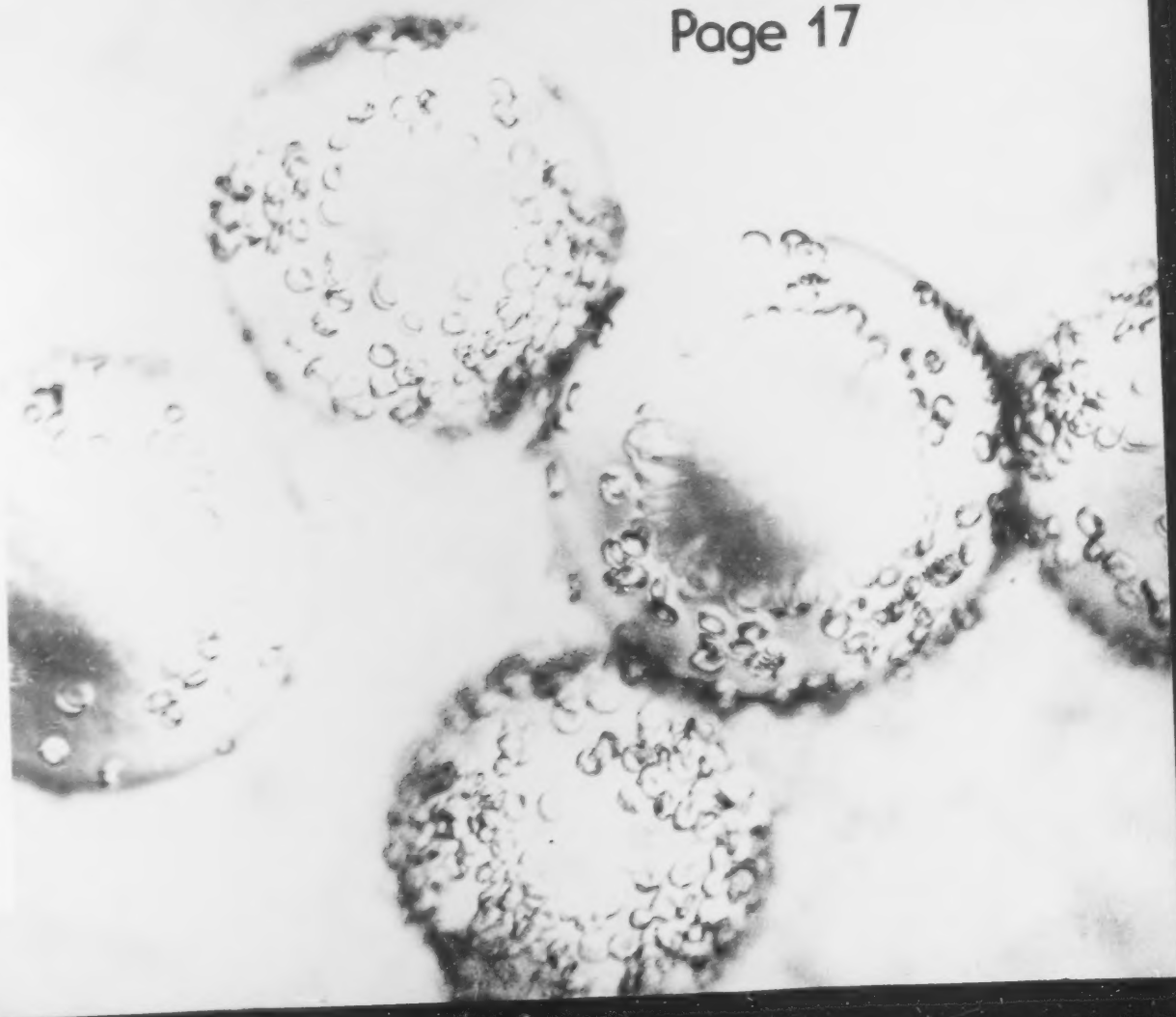

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News of the Week

■ **U.S. shipments of plastics were higher in first-half 1985 than in first-half 1984, but rate of growth declined.** **Page 4**

■ **EPA may lower or eliminate liability requirements for hazardous waste sites.** **Page 4**

■ **Suit filed against Union Carbide on behalf of victims of Institute, W.Va., gas leak.** **Page 5**

■ **First industrial unit in space will be launched by NASA for Space Industries Inc.** **Page 5**

■ **State Department accuses Soviets of using mutagenic tracer chemical on U.S. embassy personnel.** **Page 6**

Cover: Light microscope view of human red blood cells bound to wheat germ agglutinin that is immobilized on agarose beads. Affinity chromatography using this or other immobilized plant lectins can isolate intact cells or broken cell membranes

Business

Second-quarter profit margins for most U.S. pharmaceutical firms were higher than those of second-quarter 1984. **Page 8**

Government

Initial publication of Administration's regulatory policies, goals, and priorities provides for Presidential oversight of regulatory process, enhances understanding of its objectives. **Page 10**

Dioxins found in soil samples near the Niagara River during survey of dumpsite under EPA's National Dioxin Strategy. **Page 11**

Science

Two new computer systems designed for organic chemists are less complicated, can be used with personal computers. **Page 13**

Biotechnology is received favorably by leaders in science policy, environmental issues, and religion, survey shows. **Page 16**

Books

"Orphan Drugs: Medical vs. Market Value" points up dilemma of pharmaceutical firms whose R&D expenses for compounds to treat rare disease far outweigh profits derived from them. **Page 33**

ACS News

ACS Board of Directors approves Petroleum Research Fund grants of $4,048,582, bringing 1985 total to record amount. **Page 35**

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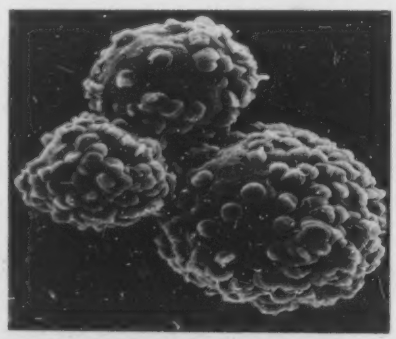


Special Report

Affinity chromatography has been used to study cell interactions and mechanisms of enzyme actions, as well as to solve problems in treatment of disease. **Page 17**

PLASTICS: Growth is continuing, but slower

Shipments of thermoset and major thermoplastics in the U.S. were up in the first half of 1985 over the comparable period a year ago, but growth is slowing.

According to the latest figures from the Society of the Plastics Industry's Committee on Resin Statistics, and compiled by accountant firm Ernst & Whinney, plastics shipments in the first half totaled 20.6 billion lb, 4% more than in first-half 1984. That rate is slower than the 6% growth in 1984, when shipments totaled 39.7 billion lb.

The SPI figures show shipments of thermosetting resins in the first half were down less than 1% to 2.83 billion lb. In 1984, thermoset demand grew 4%. And thermoplastic shipments in the first half totaled 17.8 billion lb, up 5% from a year earlier, but that's less than the 7% rate for full-year 1984.

Within the thermoplastic category, the five largest—low-density polyethylene, high-density polyethylene, polypropylene, polystyrene, and polyvinyl chloride—which together account for more than 90% of total thermoplastic shipments and almost 80% of all plastic shipments, grew at a 6% rate in the first half, the same rate as in 1984.

The largest growth among these five was for low-density polyethylene, whose shipments increased 10% in the first six months to 4.46 billion lb. That was followed by high-density polyethylene's 9% growth to 3.13 billion lb, polypropylene's 8% increase to 2.59 billion lb, and polystyrene's 5% rise to 2.02 billion lb. Only PVC lost ground, dropping 4% to 3.32 billion lb.

Within the thermosets, only urea resins showed any growth in the first half, with shipments rising 2% over first-half 1984 levels to 622 million lb. Shipments of phenolics showed essentially no change at 1.29 billion lb, polyester's dropped 1% to 634 million lb, melamine's fell 4% to about 97 million lb, and epoxies' dropped 6% to 189 million lb.

Despite the constant complaining by chemical company executives of the strong dollar and its effect on international competition, exports of thermoplastics during the first half of 1985 performed well. According to the SPI figures, exports of the five major thermoplastics increased more than 13% in the half to almost 15 billion lb. This growth was led by LDPE, exports of which grew almost 39% to 552 million lb. Exports of both HDPE and polypropylene grew 11%—to 367 million lb and 395 million lb, respectively. However, polystyrene's small-volume exports shrank almost 9% to 44 million lb, and PVC's dropped more than 25% to 140 million lb.

Based on the first-half rates, if the economy continues at its present pace, there is little reason to expect anything other than moderate growth for plastics during 1985, leaving plastics producers with a relatively good year in demand. But with price pressure resulting from anticipation of declining oil prices, profitability probably will remain a problem. □

Thermoplastic shipments increase in first half

Billions of lb	First half	Change from 1984
Total thermosets	2,834.5	−1%
Epoxy resins	189.1	−6
Polyester	633.9	−1
Urea	622.3	2
Melamine	96.5	−4
Phenolic	1,292.7	0
Total thermoplastics	17,808.1	5
Low-density polyethylene	4,460.1	10
High-density polyethylene	3,127.9	9
Polypropylene	2,593.9	8
Polystyrene	2,024.4	5
Polyvinyl chloride	3,323.0	−4
Other	2,271.0	0
GRAND TOTAL	20,634.6	4

Source: SPI Committee on Resin Statistics

Options eyed for waste site liability insurance

When the Environmental Protection Agency proposed that the liability insurance requirement for owners and operators of hazardous waste sites be eliminated, there was such an outcry that the agency made a quick turnaround and promulgated liability regulations that became effective in 1982. But the situation has changed again, and EPA is considering new options on such coverage, including easing or dropping the requirement.

Third-party liability insurance in the regulation covers bodily injury and property damage resulting from both accidental sudden releases and nonsudden releases of toxic compounds during the operating life of a facility. However, recent losses by the insurance industry, both from high claims payments and falling interest rates, have resulted in a serious decline in the number of companies that offer such insurance and a large increase in premium payments. This situation is the reason for EPA's proposed changes.

Five alternatives are being considered. The first is to maintain the present system, which specifies a minimum coverage of $3 million per occurrence and $6 million total annually. One company reported to EPA that such coverage cost it $99,000 recently. Because of the

expense and problems of availability, that option surely would cause some facilities to close. Other alternatives are to lower the scope of coverage, authorize different financial responsibility mechanisms such as corporate guarantees, issue case-by-case waivers of the current requirements, and suspend or withdraw the insurance requirements altogether.

EPA says that only 10 states still have to follow EPA rules on insurance requirements. Other states have their own financial regulations. If the requirements are changed, however, states may adopt similar alternatives subject to EPA approval. Whatever happens, waste facility operators must follow the requirements approved in their state. □

Carbide sued over Institute chemical leak

A group of attorneys last week filed lawsuits against Union Carbide on behalf of victims of the Aug. 11 toxic gas leak at the company's Institute, W.Va., chemical facility. The lawyers, all of whom are also involved in the multibillion-dollar, Bhopal-related litigation consolidated in Federal District Court in Manhattan, filed the suits in the Manhattan court and in the Kanawha County Circuit Court in Charleston, W.Va.

In total, the suits seek about $88 million in compensatory and punitive damages on charges that Carbide failed to warn the public adequately of the danger of leaks and failed to maintain an effective warning system.

Although the chemicals involved in the Institute leak were completely different from those in the December 1984 Bhopal disaster, it is thought that lawyers may be able to obtain information in pretrial examination of company witnesses in the Institute case that could be useful to them in the Bhopal case. Pretrial questioning in the Bhopal suits has been limited by the federal court (C&EN, Aug. 19, page 4).

In a press briefing, Carbide chairman Warren M. Anderson said the company is changing its emergency response procedures to remove from plant managers the responsibility of deciding when a leak is serious enough to warrant a community alert. The company also appointed William D. Ruckelshaus, former administrator of EPA, to be special counsel to head a board-of-directors-level committee that will conduct an independent investigation of the Institute release. That study will be separate from the company's internal investigation, results of which were scheduled to be disclosed last Friday.

Meanwhile, information on the possible toxicity of the released chemicals—methylene chloride and aldicarb oxime—continued to surface. Carbide questioned preliminary findings of a University of Wisconsin study showing that low-level aldicarb oxime residues may affect the immune systems of mice. "[The study] will doubtless be debated both as to its methodology and its conclusions," said Eugene J. Boros, vice president of R&D of Carbide's agricultural products operation.

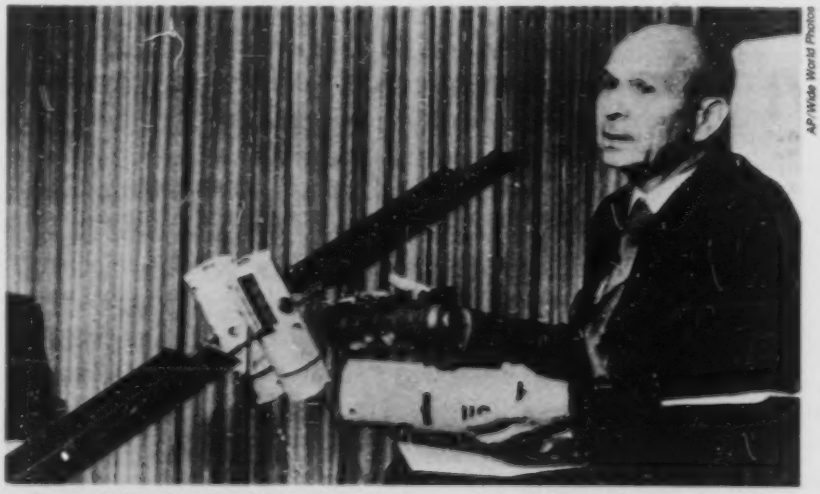
Various initiatives on methylene chloride are under way by government agencies, following the results of a study by the National Toxicology Program reported in March. A bioassay of methylene chloride administered to rats and mice by inhalation led to a finding that there is enough evidence to conclude that the substance is carcinogenic in animals and that for practical purposes it could be regarded as presenting a carcinogenic risk to humans.

Among government agencies considering action is the Consumer Product Safety Commission. A briefing paper by the CPSC staff notes that preliminary exposure information indicates that the carcinogenic risks for consumer uses of paint strippers containing methylene chloride may be as high as three in 1000. Also, for aerosol spray painting operations using products containing methylene chloride, individual lifetime risks as high as 170 in a million were calculated. These risks, the CPSC staff says, are among the highest ever calculated for chemicals from consumer products. □

Pact signed for first industrial space unit

A small Houston-based firm will construct and operate the first privately owned industrial facility in space. Under an agreement signed last week between the National Aeronautics & Space Administration and Space Industries Inc., NASA will launch two modular units to be built by SII—which will make space in them available to manufacturers—on space-shuttle missions in 1989 and 1990.

The facility, orbiting at an altitude of 265 miles, will be based initially on use of one modular unit and then on two linked units. The cylindrical units each measure 35 × 14.5 feet, have a volume of 2500 cu



AP/Wide World Photos

Space Industries' president Faget holds model of industrial space facility

Drug Firm Profitability Continues To Rise

Thanks to production efficiencies and aggressive pricing, most pharmaceutical companies recorded higher profit margins in the second quarter of 1985 compared to the year-earlier period. For a group of 15 large drug and medical supply houses, the composite profit margin (after-tax earnings as a percentage of sales) rose to 12% from 11.5% in second-quarter 1984. The level marked the fourth consecutive quarterly increase in profitability.

On the other hand, composite sales for the group increased just 3% on an annual basis, and composite net income climbed 8%. Sales continued to be suppressed by the strength of the U.S. dollar against other currencies.

The largest gains in net income were registered by A. H. Robins, with a 29% increase, Pfizer 16%, Abbott Laboratories 15%, Bristol-Myers 13%, and Revlon 12%. The worst earnings performers in the group were Baxter-Travenol, down 8%; Eli Lilly, down 3%; and SmithKline Beckman, which managed just a 1% increase.

Abbott Labs, which continued its strong performance with record sales and earnings for both the second quarter and the first half of 1985, attributed its improvement to continued productivity gains, an improved product mix, and a lower estimated effective tax rate. Company chief executive officer Robert A. Schoellhorn says he expects the company to achieve record sales and earnings for the 14th consecutive year in 1985.

Sterling Drug's 3% increase in net income on a 1% sales gain was achieved through a more favorable product mix, continued cost controls, and a decline in the effective tax rate, says John M. Pietruski, chief executive officer. The company recorded flat sales for pharmaceutical specialties, a modest gain for proprietary products, and a 14% rise in household and personal product sales. Chemical sales declined 5% for the quarter, however, and 6% for the six-month period. Sluggish demand and price competition are blamed for the fall.

Squibb reported an 11% increase in net income on an 8% sales rise. Richard M. Furlaud, chief executive officer, points out that sales would have increased 16% if not for foreign exchange rate fluctuations.

At SmithKline Beckman, earnings were held to a 1% gain by a higher tax rate. Sales, which climbed 8%, were checked by large inventories of Tagamet, the ulcer medication that is the company's star product, accumulated during the first quarter. Over the six-month period, however, notes chief executive officer Henry Wendt, Tagamet sales grew both in the U.S. and in local foreign currencies.

Pfizer's 16% gain in net income compared to second-quarter 1984 came on a mere 1% rise in sales. If not for the strength of the dollar, the company says, sales would have grown 7% in the quarter.

At Merck, cost controls, productivity measures, and a changed product mix helped offset partly the impact of exchange rates, says P. Roy Vagelos, president and chief executive officer. Still, sales fell 2% for the quarter, the result of both the dollar's strength and two major divestments.

David Webber, New York

Earnings rose in the second quarter for most pharmaceutical firms

	SECOND-QUARTER 1985						FIRST-HALF 1985					
	Sales	Earnings[a]	Change from 1984		Profit margin[b]		Sales	Earnings[a]	Change from 1984		Profit margin[b]	
	($ millions)		Sales	Earnings	1985	1984	($ millions)		Sales	Earnings	1985	1984
Abbott Laboratories	$ 827.0	$115.0	3%	15%	13.9%	12.5%	$1583.2	$217.2	4%	15%	13.7%	12.4%
American Home Products	1113.0	167.1	4	10	15.0	14.1	2320.5	348.0	5	10	15.0	14.3
Baxter Travenol	499.8	43.6	6	−8	8.7	10.0	997.1	82.4	14	−1	8.3	9.5
Bristol-Myers	1079.8	125.9	2	13	11.7	10.5	2162.3	250.5	2	13	11.6	10.4
Lilly	756.8	110.1	5	−3	14.5	16.7	1665.7	271.0	3	4	16.3	16.1
Merck	877.4	137.9	−2	5	15.5	14.7	1733.7	269.5	0	5	15.5	14.7
Pfizer	1001.9	137.5	1	16	13.7	12.0	1953.8	284.9	2	15	14.6	12.9
Revlon	582.4	34.6	1	12	5.9	5.3	1133.6	62.7	−1	13	5.5	4.8
A. H. Robins	164.7	5.3	8	29	3.2	2.7	331.1	26.8	7	34	8.1	6.5
Schering-Plough	479.6	51.8	1	8	10.8	10.1	966.6	105.9	0	5	11.0	10.5
SmithKline Beckman	770.7	121.4	8	1	15.8	16.8	1540.7	253.2	8	1	16.4	17.5
Squibb	474.6	52.3	8	11	11.0	10.7	927.7	94.6	7	13	10.2	9.7
Sterling Drug	453.6	33.1	1	3	7.3	7.2	869.4	65.0	−2	3	7.5	7.1
Upjohn	543.3	52.2	8	8	9.6	9.5	1019.6	107.2	1	−7	10.5	11.4
Warner-Lambert	810.9	66.9	2	8	8.2	7.8	1605.5	126.7	2	9	7.9	7.4

a Excludes significant extraordinary and nonrecurring items. b After-tax earnings as a percentage of sales.